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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BART JACOB BAKKER,
RENE VAN DEN HAM, and HENDRIK JAN VAN OOJEN

Appeal 2018-005405
Application 14/126,580[1]
Technology Center 3700

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and DAVID COTTA, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This Appeal under 35 U.S.C. § 134(a) involves claims 1, 2, 4–8, and 16–21 (Final Act.[2] 1). Examiner entered rejections under 35 U.S.C. § 101 and 35 U.S.C. § 103(a). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] Appellants identify "Koninklijke Philips N.V." as the real party in interest (App. Br. 2).

[2] Office Action mailed August 10, 2017.

STATEMENT OF THE CASE

Appellants' disclosure "relates to a method of predicting a blood dilution risk value of a first blood circulation, to a clinical decision support system for predicting and displaying a blood dilution risk value, a program element for predicting and displaying a blood dilution risk value and a computer readable medium" (Spec. 1). Appellants' claim 1 is representative and reproduced below:

> 1. A method of predicting a blood dilution risk value of a first blood circulation, the method comprising:
>
> providing measured coagulation data describing a stable haemostatic situation of the first blood circulation at a first point in time,
>
> applying the measured coagulation data as an input for a numerical model, the numerical model being a mathematical and dynamic representation of a blood dilution of the first blood circulation, wherein blood dilution includes blood loss or lowered concentrations of blood clotting proteins,
>
> performing a computer simulation of a time development of the haemostatic situation by means of the numerical model and based on the measured coagulation data used as an input for the numerical model
>
> calculating, with a processor, values of concentrations of human blood proteins as an output of the simulation, and
>
> *translating, with the processor, at least some of the calculated values of the concentrations of the human blood proteins into a predicted blood dilution risk value*, which risk value describes at least one of a risk of embolism, lack of clotting and bleeding for the first blood circulation due to blood dilution.

(App. Br. 7 (emphasis added).)

The claims stand rejected as follows:

Claims 1, 2, 4–8, and 16–21 stand rejected under 35 U.S.C. § 101.

Claims 1, 2, and 4–6 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mann.[3]

Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Rodriguez-Fernandez.[4]

Claim 8 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Gibbons.[5]

Claims 16–21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Anderson.[6]

Subject Matter Eligibility:

ISSUE

Does the evidence of record support Examiner's finding that Appellants' claimed invention is directed to patent ineligible subject matter?

ANALYSIS

The scope of 35 U.S.C. § 101 "is subject to an implicit exception for 'laws of nature, natural phenomena, and abstract ideas,' which are not patentable." *Intellectual Ventures I LLC v. Capital One Financial Corp.*, 850 F.3d 1332, 1338 (Fed. Cir. 2017), citing *Alice Corp. Pty. Ltd. v. CLS*

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[3] Mann et al., US 2009/0298103 A1, published Dec. 3, 2009.
[4] Rodriguez-Fernandez et al., *Global Sensitivity Analysis of a Biochemical Pathway Model*, In: Corchado J.M., De Paz J.F., Rocha M.P., Fernández Riverola F. (eds) 2nd International Workshop on Practical Applications of Computational Biology and Bioinformatics (IWPACBB 2008). Advances in Soft Computing, vol 49. Springer, Berlin, Heidelberg (2009).
[5] Gibbons et al., US 2009/0233312 A1, published Sept. 17, 2009.
[6] Anderson, US 6,524,861 B1, issued Feb. 25, 2003.

Bank Int'l., 134 S. Ct. 2347, 2355 (2014); *see also Mayo Collaborative Services v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) ("'[L]aws of nature, natural phenomena, and abstract ideas' are not patentable" (citation omitted, alteration original)).

Alice, sets forth the following two-step analysis for determining patent eligibility under Section 101:

> First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts [e.g., a law of nature, natural phenomenon, or abstract idea]. If so, we then ask, what else is there in the claims before us? . . . We have described step two of this analysis as a search for an inventive concept—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.

Alice, 134 S. Ct. at 2355 (alterations, citations, and quotation marks omitted).

With respect to *Alice*'s first step, Examiner finds that, when considered as a whole, Appellants' claimed invention is "directed to an abstract idea (*i.e.*, analyzing measured coagulation data describing a stable hemostatic situation to determine an individual's risk for lack of clotting, embolism and/or bleeding)" (Final Act. 4; Ans. 2). We agree.

According to Appellants, their independent

> [c]laim 1 goes beyond producing a quantity representative of the individual's condition at one point in time and comparing the quantity to a reference. For example, claim 1 recites using measured data as an input to a numerical model and performing a computer simulation of a time development of a haemostatic situation by means of the numerical model to obtain a predicted blood dilution risk value.

(App. Br. 3.) Stated differently, when considered as a whole, Appellants' claimed invention comprises, at best, the steps of collecting, manipulating,

and displaying data. "[A]n invention directed to collection, manipulation, and display of data [is] an abstract process." *Intellectual Ventures*, 850 F.3d at 1340; *see generally id.* at 1340–41.

> Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible. "If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory." *Parker v. Flook*, 437 U.S. 584, 595[] (1978) (internal quotations omitted).

Digitech Image Techs., LLC v. Elecs. For Imaging, Inc., 758 F.3d 1344, 1351 (Fed. Cir. 2014).

Appellants further contend that their independent "[c]laim 1 requires a computer implemented rule for the 'translating step' to automate a task previously performed by a human" and this "rule," or algorithm, provides "a specific way to solve a problem, rather than merely claiming the idea of a solution or outcome" (App. Br. 4). We are not persuaded. "[A]nalyzing information by steps people go through in their minds, or by mathematical algorithms, without more," are "essentially mental processes within the abstract-idea category." *FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1093 (Fed. Cir. 2016).

In sum, we agree with Examiner's finding that Appellants' claimed invention is directed to an abstract idea (Final Act. 4).

With respect to *Alice*'s second step, the search for an inventive concept, Examiner finds that the additional elements in Appellants' claims "are directed to [] insignificant extrasolution activity" that is "well-understood, routine and conventional" in this art (Final Act. 4). Appellants do not dispute Examiner's findings, but instead assert that their claimed

invention "is analogous to the claims in *McRo* and is not directed to an abstract idea" (App. Br. 4). We are not persuaded by Appellants' contentions relating to *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). In *McRO*, "the automation goes beyond merely 'organizing [existing] information into a new form' or carrying out a fundamental economic practice," or, as in this case, performing known manual methods of manipulating data that was "previously performed by humans". *McRO*, 837 F.3d at 1315 (alteration original); *see also* App. Br. 4. To the contrary, in *McRO* "[t]he claim use[d] . . . rules in a process specifically designed to achieve an improved technological result in conventional industry practice." *McRO*, 837 F.3d at 1316. In contrast, as Appellants' concede, the abstract ideas embedded in their claim simply "automate[s] a task previously performed by a human" (*see* App. Br. 4), which does not make the abstract idea patent-eligible. *See also FairWarning*, 839 F.3d at 1093 ("analyzing information by steps people go through in their minds, or by mathematical algorithms, without more," are "essentially mental processes within the abstract-idea category"). Therefore, we are not persuaded by Appellants' contention that their claimed invention "is not an abstract idea under McRO" (App. Br. 4; *see also* Reply Br. 2–4).

CONCLUSION

The evidence of record supports Examiner's finding that Appellants' claimed invention is directed to patent ineligible subject matter. The rejection of claim 1 under 35 U.S.C. § 101 is affirmed. Claims 2, 4–8, and 16–21 are not separately argued and fall with claim 1.

Obviousness:

ISSUE

Does the preponderance of evidence relied upon by Examiner support a conclusion of obviousness?

ANALYSIS

Examiner finds that Mann discloses the subject matter of Appellants' claim 1, but for performing the translating step by a processor (Final Act. 7). In this regard, Examiner finds that instead of performing a translating step by a processor, as is required by Appellants' claimed invention, Mann performs the step "manually by a clinician" (*id.*). Examiner finds, however, that, "it has been held that broadly providing an automatic means to replace a manual activity to accomplish the same result is not sufficient to distinguish over the prior art" (*id.* (citing Manual of Patent Examining Procedure § 2144.04); *see also* Ans. 6). *See In re Venner*, 262 F.2d 91, 95 (CCPA 1958) ("it is well settled that it is not 'invention' to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same result"). Therefore, based on Mann, Examiner concludes that, at the time Appellants' invention was made, it would have been prima facie obvious to automate the translating step of Mann's method so that it was performed by a "processor in order to provide a more convenient method capable of being performed/monitored by less experienced clinicians" (Final Act 7).

Examiner also relies upon Mann in combination with either Rodriguez-Fernandez, Gibbons, or Anderson to make obvious the requirements of a variety of Appellants' dependent claims (*see* Final Act. 8–11; *see also* Ans. 7–8).

We find no error in Examiner's findings or conclusion of obviousness.

Appellants recognize that Mann discloses that: (1) "a clinician compares the outputs of a simulation to reference values or other criterion to determine if the outputs are symptomatic of a disease state or that the results indicate that the patient or subject is pre-disposed such that an undesirable medical event could occur in the future" and (2) "a method wherein a clinician compares the output of the simulation to reference values to determine if the subject is predisposed to hemostatic risk" (App. Br. 5 (citing Mann ¶¶ 33 and 150); *see generally* Ans. 4–5 (citing Mann ¶ 150)). Nevertheless, Appellants contend that Mann "clearly does not disclose or suggest translating a calculated value into a risk ***value*** at least because Mann never determines a risk ***value***" (*id.*). We are not persuaded.

Appellants' independent claim 1 requires that the "risk value describes at least one of a risk of embolism, lack of clotting and bleeding for the first blood circulation due to blood dilution" (App. Br. 7). In addition, as Examiner points out, Appellants' Specification discloses that

> [t]he risk value may be embodied as a value ranging between 0 and 1 or may be embodied as a displayed color that may have different nuances with respect to the present underlying predicted risk. However, other different representations of the risk value shall be comprised in the scope of the present invention.

(Ans. 5 (citing Spec. 4).) As Examiner makes clear, although "Mann does not expressly teach the risk value is, *e.g.*, a numerical quantity, the claimed risk value is not so limited by the language of [Appellants'] pending claims" (*id.* at 6). Thus, for the foregoing reasons, we find no error in Examiner's finding and conclusion that

> Mann teaches and/or suggests determining a risk value corresponding at least to one of the patient being pre-disposed/at risk for hemophilia/a lack of clotting and the patient not pre-disposed/at risk for hemophilia/a lack of clotting based on at least some of the calculated values of the concentrations of the human blood proteins, and therefore meets the limitations of [Appellants'] claim 1.

(Ans. 6.) In this regard, Examiner finds that Mann discloses

> determining the concentrations of a plurality of blood factors in a biologic sample from the subject and simulating in silica the concentration of thrombin from the determined concentrations, comparing the simulated concentration of thrombin to a reference by a clinician, and determining from the simulated concentration if the subject is predisposed to hemostatic risk, wherein the hemostatic risk is hemophilia, i.e., a "lack of clotting").

(*Id.* (citing Mann ¶ 33); *see generally* App. Br. 5 (citing Mann ¶ 33).) For the foregoing reasons, we are not persuaded by Appellants' contention that Mann does not teach a risk value within the scope of Appellants' claimed invention (*see e.g.,* Reply Br. 4–5 (citing Mann ¶ 150)).

Having found no deficiency in Mann, we are not persuaded by Appellants' contention that Rodriquez-Fernandez, Gibbons, or Anderson each fail to make up for Appellants' alleged deficiency in Mann (*see* App. Br. 5–6; Reply Br. 5–6)

CONCLUSION

The preponderance of evidence relied upon by Examiner supports a conclusion of obviousness.

The rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Mann is affirmed. Claims 2 and 4–6 are not separately argued and fall with claim 1.

The rejection of claim 7 under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Rodriguez-Fernandez is affirmed.

The rejection of claim 8 under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Gibbons is affirmed.

The rejection of claim 16 under 35 U.S.C. § 103(a) as unpatentable over the combination of Mann and Anderson is affirmed. Claims 17–21 are not separately argued and fall with claim 16.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED